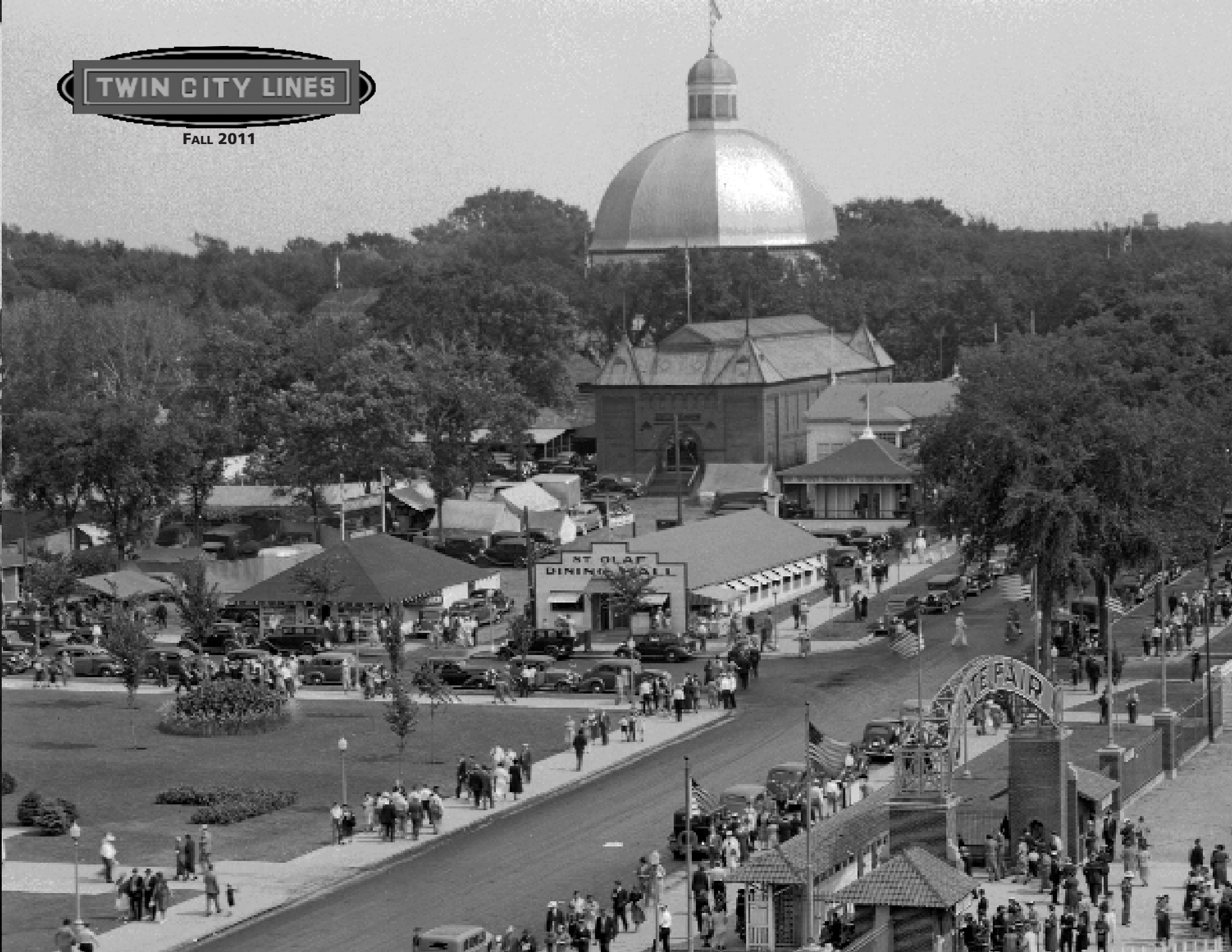




FALL 2011





TWIN CITY LINES

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"WHY HAVE YOU
TAKEN TO RIDING
IN STREET CARS?"

"DOCTOR TOLD ME
TO CONSIDER MY
NERVES."



"SO YOU ARE RIDING
THE STREET CARS
NOW, FRED?"

"YES, I GOT TIRED OF
TRYING TO FIND A
PLACE TO PARK."



Front cover: Recently MSM did a photo swap with the Minnesota State Fair Museum and acquired this great 1930s view of streetcars at the fair, taken from the Hippodrome roof.

Inside front cover: At the top of the Duluth incline, passengers could transfer to the isolated Highland line. Its two cars operated without conductors beginning in 1912. For more on Duluth-Superior's conversion to one-man operation, see page 4.

Above: As auto competition eroded ridership in the 1920s, TCRT responded with this ad campaign showing fashionable people bucking the trend.

Duluth converts to one-man streetcars

-Aaron Isaacs

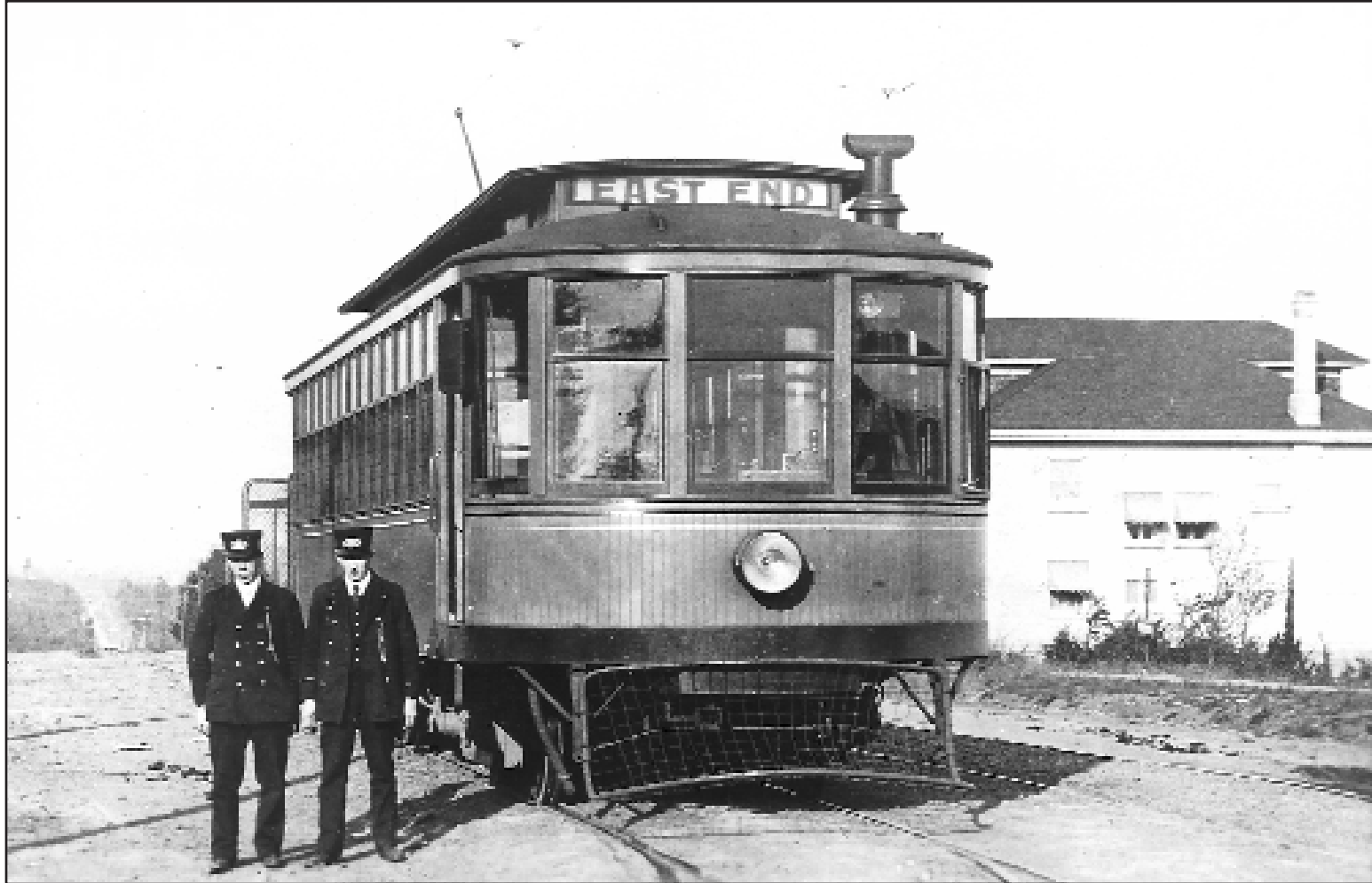
Today it would be sexist to refer to one-man and two-man streetcars, but it was accepted parlance back then because there were no women running streetcars (although, as will be mentioned later, this was not entirely true). However, this is history, so we'll use those terms.

The 1920s saw the beginning of the long transit ridership decline as auto ownership and paved roads became universal. The streetcar companies adapted, buying lightweight streetcars to lower power consumption and upgrading their older cars to be more attractive. Their largest cost was labor, and by far the biggest opportunity for cost cutting was to eliminate conductors, converting the streetcars from two-man to one-man. However, doing so created problems and complications.

The value of the conductor was most obvious on heavily traveled lines. The crowd would pile aboard and the conductor would collect the fares while the car was underway to the next stop. This practice had eroded somewhat with the adoption of Pay As You Enter fare collection. Prior to that, the boarding passengers would take their seats before paying. As the car rolled along, the conductor would try to remember who had boarded. Not surprisingly, many passengers hid in the crowd, hoping the conductor wouldn't recall them. This was particularly difficult if there was a standing load.

In those days, there were no fareboxes. The conductor deposited the fares in separate envelopes for each trip, and the envelopes went into one of his many coat pockets. He rang the fares up on an overhead fare register.

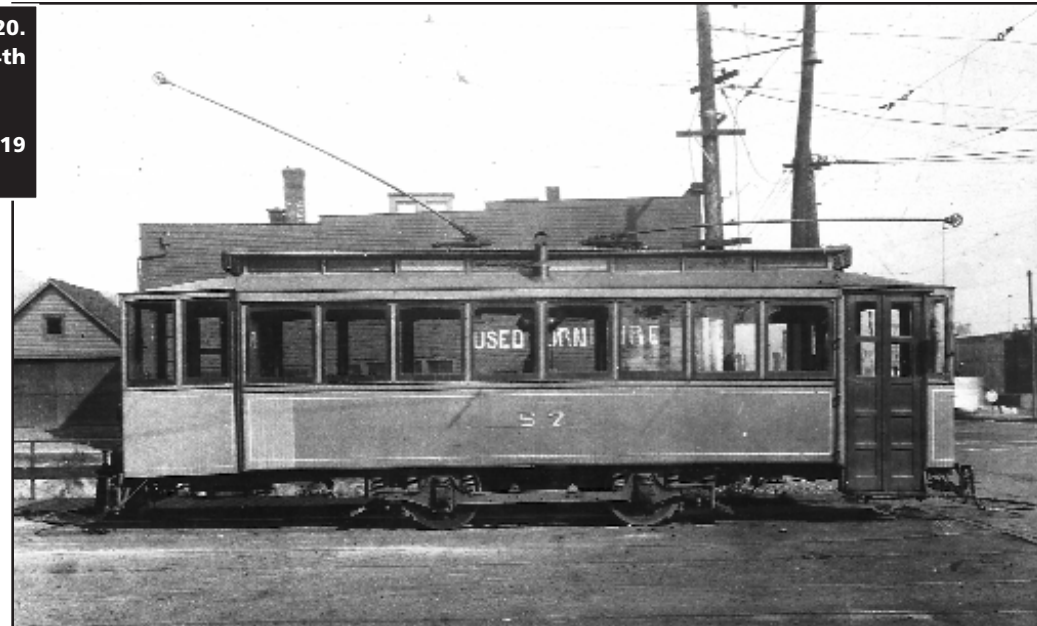
Pay As You Enter, abbreviated to



Above: A typical two-man crew before 1920. This may be the wye at 4th Street and 24th Avenue East.

Right: Car 57 converted to one-man in 1919 for service on the West 4th Street shuttle.

PAYE, was sometimes also called Pay As You Pass. It was implemented in Superior in 1924 and Duluth in 1926. Rather than let the passengers sit and then try to locate them, PAYE required that everyone deposit their fares in a farebox as they entered the car. However, Duluth Street Railway (DSR) over-reacted by testing turnstiles in a few cars. Besides reducing seating capacity, the public response to the





The test of PAYE turnstiles provoked a negative public response. It didn't last.

turnstiles was quite negative and they were quickly removed.

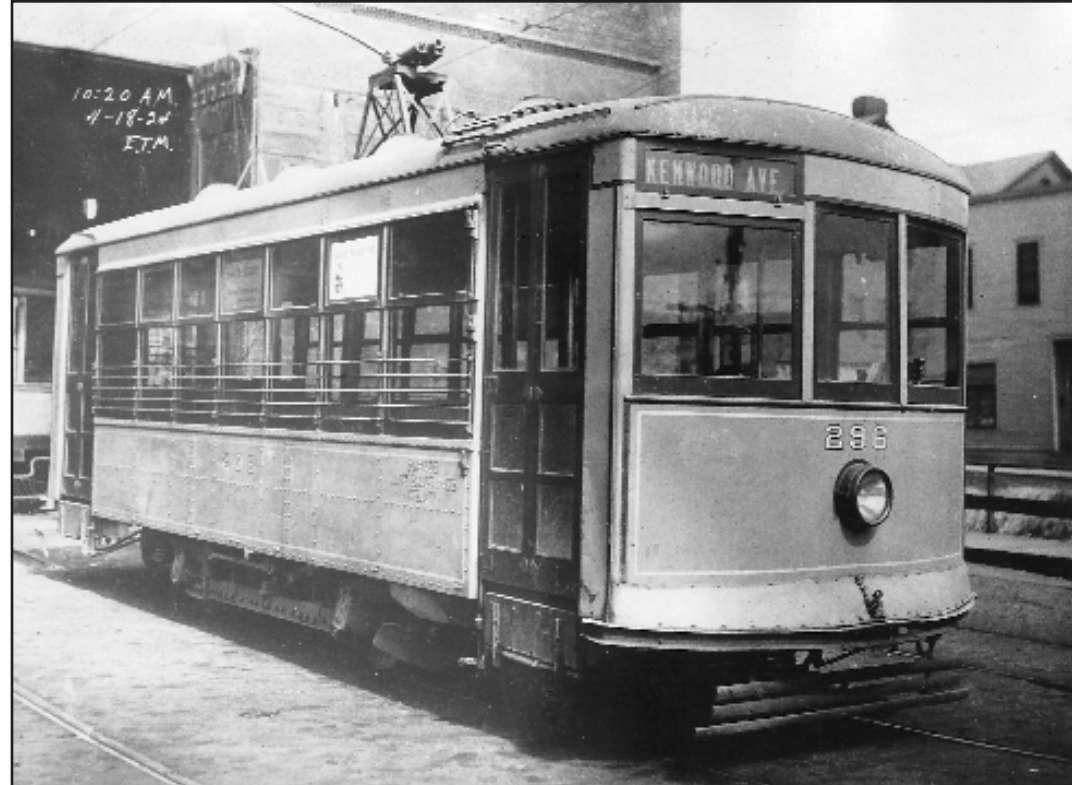
PAYE reduced fare evasion, but it limited the number who could fit onto the car's rear platform before paying. At a place like the McDougall Shipyard, where huge crowds waited to board, PAYE slowed down the operation significantly.

There were a few lightly traveled lines where conductors had always been an extravagance. The lightest of all were the isolated Highland line, which went one-man in 1912 and the West 4th Street line, which shuttled back and forth on a mile of track and averaged three passengers per trip. DSR rebuilt a pair of old single truckers for double-ended operation and converted W. 4th Street to one-man in 1919.

Buying new cars

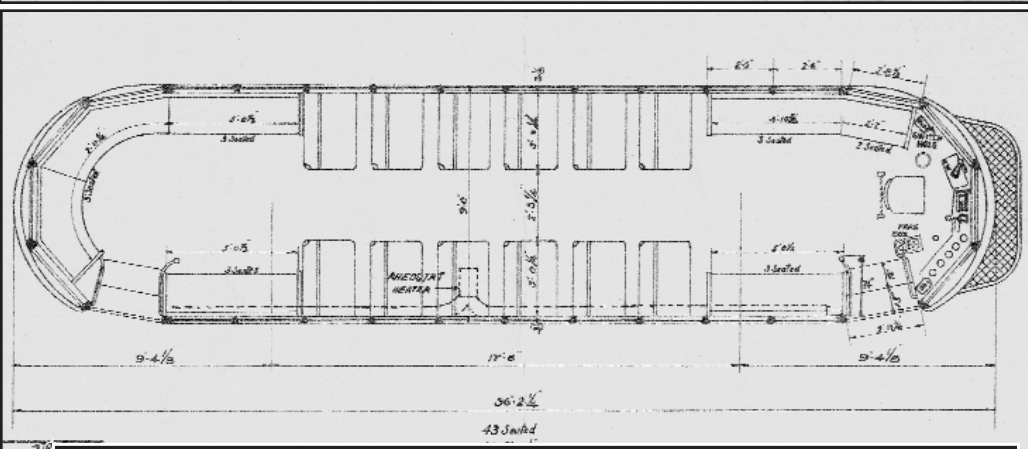
The old single truckers were worn out, uncomfortable and unpopular with passengers, so further retrofits were ruled out. Instead, DSR purchased six single truck lightweight Birney Safety cars, the new standard for lightly traveled streetcar lines across North America. They were delivered in 1919. Besides being new, the Birneys reduced power consumption dramatically. They were assigned at various times to Park Point, Kenwood, East 9th Street, Crosley and Piedmont.

The Superior lines were lightly traveled, but the city refused to allow one-man cars, so the Birneys were deployed in Duluth. Though economical, they proved unpopular



DSR purchased six Birney cars in 1919. Designed to minimize operating cost through one-man operation and weight reduction, they were unpopular with riders and bogged down easily in snow, such as this major storm in February, 1922.





The five lightweights built at Snelling Shops are shown here at the Duluth carhouse, but were deployed in Superior.



with passengers. Like every single trucker, they gave a bouncy lurching ride. The uncushioned wood slat seats were uncomfortable. They were poorly insulated, causing them to be noisy and cold in the winter. They were so light they bogged down easily in snow. After problematic deployments on the Piedmont, Kenwood and East 9th Street lines, three of them were assigned to Park Point, where they were ran most service. The older double truck cars replaced them during snowstorms and when ridership spiked on summer evenings and weekends.

At the urging of DSR, the City of Superior finally allowed one-man cars in 1924. Three of the standard cars, #163, 165 and 166, were converted to one-man in 1924 for use on the Billings Park-Broadway line. Additional conversions of five cars followed in 1925-26, including #167, shown on the opposite page.

DSR was still looking for operating economies. The answer was to purchase a small group of Twin City Rapid Transit's new double truck lightweights. TCRT had been experimenting with lightweights since 1916. In 1925 they licensed the designs to the Lightweight Noiseless Streetcar Company, which built new cars at Snelling Shops for several cities.

DSR ordered five cars, #301-305. They were delivered in 1925. Motors burned out on the steep Duluth hills, so the group was assigned to Superior, where they replaced the heavy wood standard cars on the East End-Allouez and Billings Park-Broadway lines. Although the cars had some technical problems, they rode comfortably and reduced power consumption by half. The converted standards and the five lightweights were sufficient to convert all Superior service to one-man except for the Interstate line to Duluth.

Modifying the cars

-Jim Kreuzberger

Note: The late Jim Kreuzberger wrote an unpublished manuscript on the history of streetcars in Duluth. Here is his description of how DSR converted its fleet to one-man operation.

DSR did have some one-man cars, remodeled or otherwise, before it began the extensive conversion of two-man cars that began in 1924. Cars 52 and 57 were the sole survivors of the original single truck cars. These two had been retained for use on the West 4th Street shuttle line and had been converted from two- to one-man operation in May 1919.

The two Highland cars, #255-256, had been one-man cars since 1912.

The four double truck Park Point cars, #285-288, were two-man cars when acquired by DSR in 1917, but were converted to one-man operation in August 1919 to bring about much-needed operating economies after World War I.

The six Birney cars, #295-300, were by nature one-man cars; so also were the five lightweights, #301-305.

DSR's fleet of standard cars had been well built and well maintained, and were good for many more years and miles of dependable, comfortable service. Of no little concern was the fact that the lightweight and Birney cars did not perform well in deep snow, and required budgeted costs for snow plowing to be increased considerably. Management determined that the low cost of converting standard cars in its own shops was more favorable than the purchase of new cars.

Mechanical, electrical and structural conversion of standard cars to one-man operation cost approximately \$1000 per car, plus the additional cost of safety equipment and controllers. Based on prices furnished by A. L. Drum & Co.,



Four Park Point double-truckers, #285-288, were converted in 1919 to one-man when DSR purchased the line in 1917.

transit consultants, the price of new commercially built double truck passenger cars was \$19,000, ready to operate; for Birney single truck cars, \$5400.

There were other factors that came into play at this time. After much litigation, DSR had been ordered to extend the Kenwood Avenue line. Construction of the controversial track section began May 15, 1924. DSR had strongly opposed this extension, convinced that costs of operating the line—not to mention amortization of construction costs—would greatly exceed anticipated revenues. This was probably the catalyst that turned the tide to greater use of one-man cars in Duluth, and the Kenwood line was the first to get the cars.

Conversion of DSR's fleet of cars to one-man operation began in 1924, was completed in the straight jacket of a Depression in 1930, and involved all departments of the company. Planning, designing, rebuilding and testing were methodically and competently

accomplished in the company's offices and shops, several early phases of which were accomplished before TCRT launched its comparable program.

Preliminary planning and shop preparations began in May 1924 from blueprints dated April 5. Three cars—163, 165, 166—had been selected for conversion, and the project was well along when State Commission Engineers stopped by DSR shops July 21. DSR filed with the Wisconsin Railways Commission on May 5 for permission to operate one-man cars, previously outlawed in Superior. Hearings were held in Superior on June 9 with nothing resolved. Finally, of September 25, WRC granted the requested permission. Now the scene changed quickly. The three remodeled cars came out of the shops on August 28 and went through several days of shake down operation and crew

In 1925 car 167 was in the first group of standard car conversions for the Superior lines.

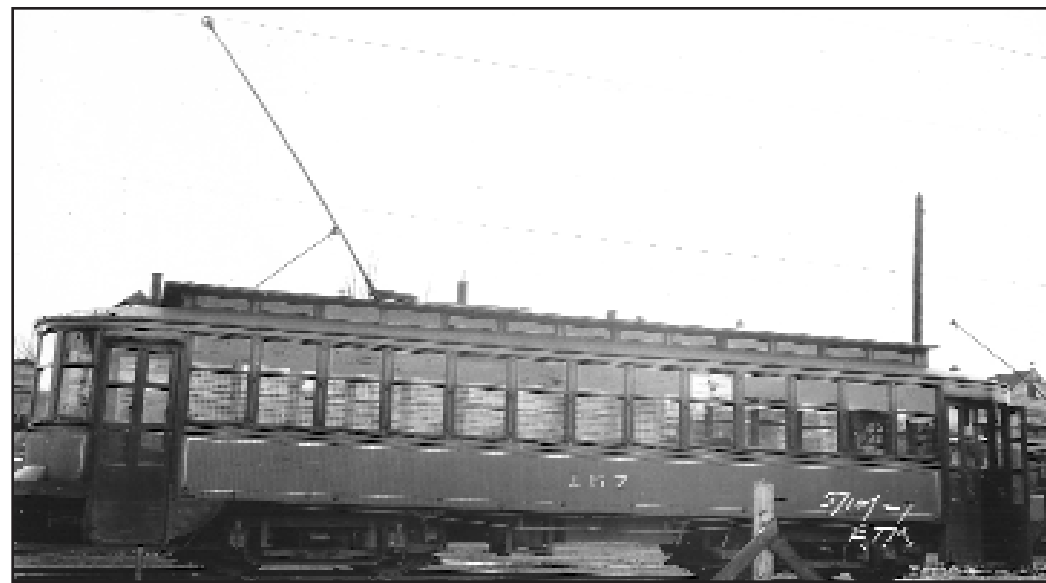
training. Instead of their planned assignment to the Kenwood line, they were sent immediately to Superior for service on the Billings Park-Broadway line. DSR was satisfied with their performance and acceptance and these were followed by two more—164 and 167 in August 1925, plus an additional three cars in 1926, all for use on Superior local lines.

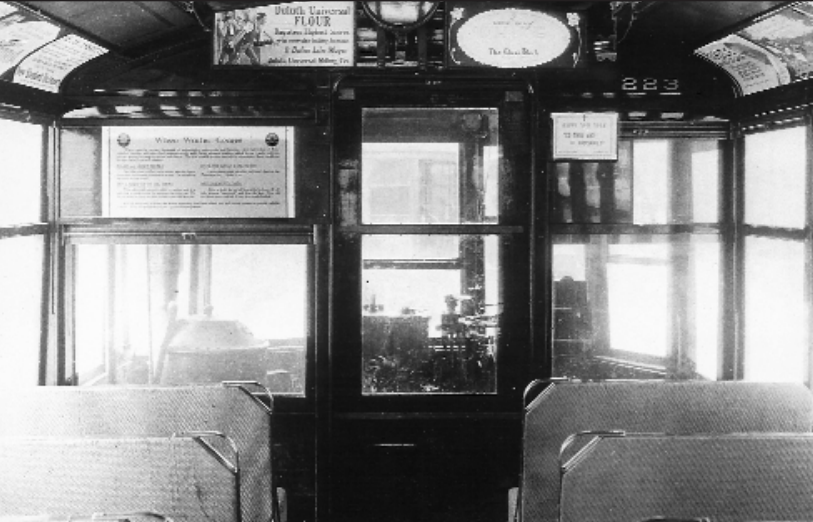
DSR chose cars from its second oldest series, built in 1904, for the initial remodeling, whereas TCRT started with their newest cars. This group of DSR cars had drop rear platforms (the platform was a step lower than the main carbody), but flush front platforms, which would have made them almost impossible to adapt to a front entrance/exit configuration. The solution was to turn the car body end-for-end. The rear platform—which had been the front platform—was enclosed and a single pair of manually operated doors, for emergency exit only, replaced the previous rear gate configuration. A double set of pneumatic-operated doors with an overall opening 52 inches wide was installed at the front of the car. Front interior bulkhead doors were removed. The Simplex Safety System, one of two state of the art control systems of the

time, was installed in all eight cars. This incorporated a “dead man” control and other safety features in the motorman's brake valve.

Sufficient one-man cars had been produced in DSR's shops to equip all Superior local lines by July 1926. Rising costs, declining revenue passengers and declining revenue brought on in part by a plague of unregulated, competitive small bus operators and proliferation of Model T Fords were taking their toll. In a May 25, 1925 inspection of the Oneota Street tracks, Superintendent H. H. Brown, lamenting the decline of passengers on that line, suggested that to “make the line pay, I think we should plan on converting some of our cars for one-man operation, the same as those converted for Superior.” So in December 1927, DSR determined that the time had come for one-man cars in Duluth as well. The first of these cars, #170 and 171, came out of the shops February 18, followed by 172 and 173 a month later. Rebuilding cost of wood underframe cars \$1970; steel underframe cars \$1600.

These four cars went into service on the West Duluth-Aerial Bridge line on April 1, 1928. Several refinements were incorporated into the rebuilding of





Top: As built, the motorman's compartment of Duluth standard cars was isolated from the passengers behind a front bulkhead and closed door.



Middle: Front exit doors were added to some two-man cars to reduce congestion on the rear platform. Note the EXIT sign. Part of the bulkhead was moved forward into the front platform to accommodate the exit. Longitudinal (aisle-facing) seats were added.

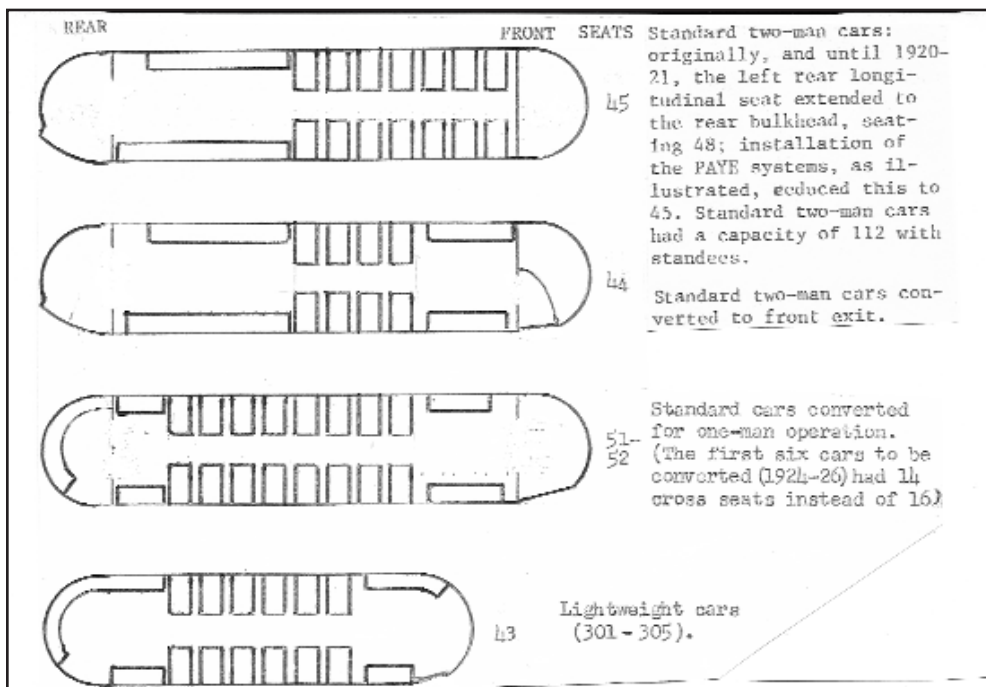


Bottom: The conversion to one-man operation added the double front entrance doors and farebox and removed most of the front bulkhead. Numerous cars also received new leather-upholstered seats.



Rebuilding the cars for one-man operation required enclosing the rear platforms and replacing the manually opened wire gates with powered doors, step treadles and the curved rear bench seat. Below: Car 242 is at the Woodland loop, meeting the Calvary Road shuttle bus.



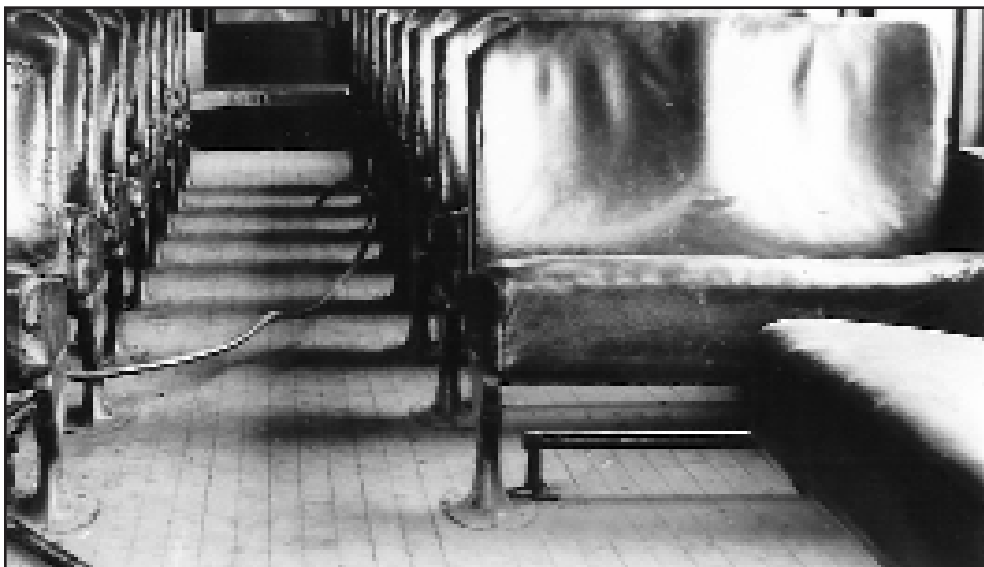


Above: Jim Kreuzberger made this drawing showing how the seating arrangements evolved as the streetcars were rebuilt.

Below: Commercially produced Heywood Wakefield leather upholstered seats replaced the rattan TCRT originals in most of the rebuilt cars.

Above right: This pamphlet told riders how to use the new rear exit step treads.

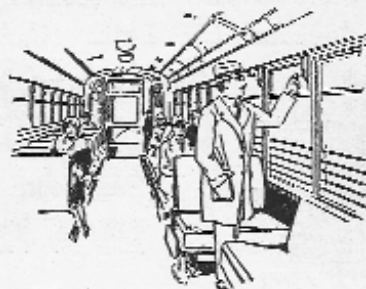
Below right: Looking down at the step treads.



How to use the Rear Treadle Exit

-1-

Ring the Bell as Usual



-2-

Walk to the Rear



-3-

Step on the Treadle Plate



It opens the door for you as soon as the car stops

Simple, Isn't It?

DO not hesitate to step on the treadle plate while the car is moving. The doors cannot open until the car has stopped.

A pressure of only twelve pounds will operate the treadle.

After the car has stopped, it cannot possibly start again as long as you are standing on the treadle plate or on the steps.





This wye at Lake Avenue and Morse Street, just short of the Aerial Bridge, was converted to a loop after one-man cars were assigned, because of the danger of backing into the wye. It was one of several such conversions.

those cars and the 61 others that went through the shops. Comfortable, cushioned leather-covered, form fit seats replaced the traditional rattan seats on most cars. Ceilings on most cars were white enameled. Interior lighting was moved from the window posts to the ceiling on most cars, and fitted with milk glass shades. Less apparent to the passengers, but of considerable importance in safety and better operation, was the installation of controllers and brake system

equipment with "dead man" features. DSR utilized both the General Electric and Simplex systems, 45 of the former and 27 of the latter. All included pneumatic sanders, front and rear. Installation of this additional equipment added 2000 pounds to the cars' weight.

The last car to be converted came out of the shops August 30, 1930.

Most of the system continued to carry heavy loads. The company was in no financial position to replace its

fleet with modern full-size lightweights, so the decision was made to convert enough standards to one-man to meet most of the service needs. The decision was made in 1928 to convert the Duluth side of the system and that was completed in 1930. A total of 65 cars were converted during those years. With the earlier Superior conversions, 73 of the 136 remaining standard cars (two had been wrecked) were converted. The remaining two-man cars were gradually retired.

Two-man Cars Retired

1931	12
1934	1
1935	28
1936	17
Total	58

Other impacts of one-man operation

Backing around wyes

Conductors had always provided a lookout when backing into a wye or the carhouse. Now, the motorman had to do it alone from the front end. The danger of hitting someone or something was obvious. Here are the company instructions for backing into a wye, from a March 31, 1929 bulletin. As usual, the language erred on the side of thoroughness and repetition.

"An additional mirror has been put on the left side of the front vestibule to enable the operator to see alongside and to the rear of his car on the left hand side. He will be able to see along the right hand side through the ordinary motorman's mirror. Even with this additional mirror it will be impossible for the operator to see any object which is directly behind and close to his car but with the two mirrors he will be able to see anything approaching from either side.

Before starting to back one of these cars when wying at terminals, the operator will go to the rear, either through the inside of his car or by running back around the outside, to see that all is clear behind the car. He will then immediately start to back his car at a speed not to exceed 3 miles per hour, the rate at which a man walks leisurely, keeping a constant lookout through the body of the car when the view is not obstructed by standing passengers but otherwise through the mirrors on both sides of the vestibule for anyone coming from either side of the car who could get in its path while

backing up and constantly and loudly ring his gong during the entire time of backing with one loud stroke every 20 feet... It would not be safe for one man to back at a higher rate of speed without taking these precautions. If any accident happens in connection with the backing of these cars...by one man it will be due only to a disregard of these precautions....If an emergency stop is necessary the operator should use the 'dead-man control' by simply removing his hand from the air lever."

Despite these rules, backing from the front end was dangerous. The company made two changes in response. The first was to replace five wyes with loops, eliminating the need for backup moves, at these locations:

At 63rd and Tower in South Superior

At Superior and 32nd Avenue W.

At Lake Avenue and Morse Street, just north of the Aerial Bridge

The Armory loop at Superior and 13th Avenue E. replaced the wye at Superior and 3rd Avenue E.

The loop at 4th Street and 27th Avenue E. replaced the wye at 4th Street and 24th Avenue E.

Eventually backup controls were installed, allowing the motorman to control the car from the rear.

Calling streets

Calling streets was always the conductor's responsibility. The motorman was isolated behind a closed door. With that door removed, the motorman was now responsible for calling streets. However, where the conductor could face into the car to project his voice, the motorman was further from the passengers and facing away from them. This from a company bulletin: "It will be necessary for operators to use their voices strongly in calling streets and avenues so the passengers in the rear part of the car can hear them."

Grade crossings

It was standard DSR policy for conductors to dismount at railroad grade crossings and flag the car across. The car would move forward while the conductor flagged and stepped aboard as it passed. Without a conductor, the company required the motorman to leave the car, walk forward to the grade crossing, determine that no train was coming, return to the car and proceed across the tracks. It had to take more time, especially on lines like the Interstate and Billings Park-Broadway, each of which had several grade crossings.

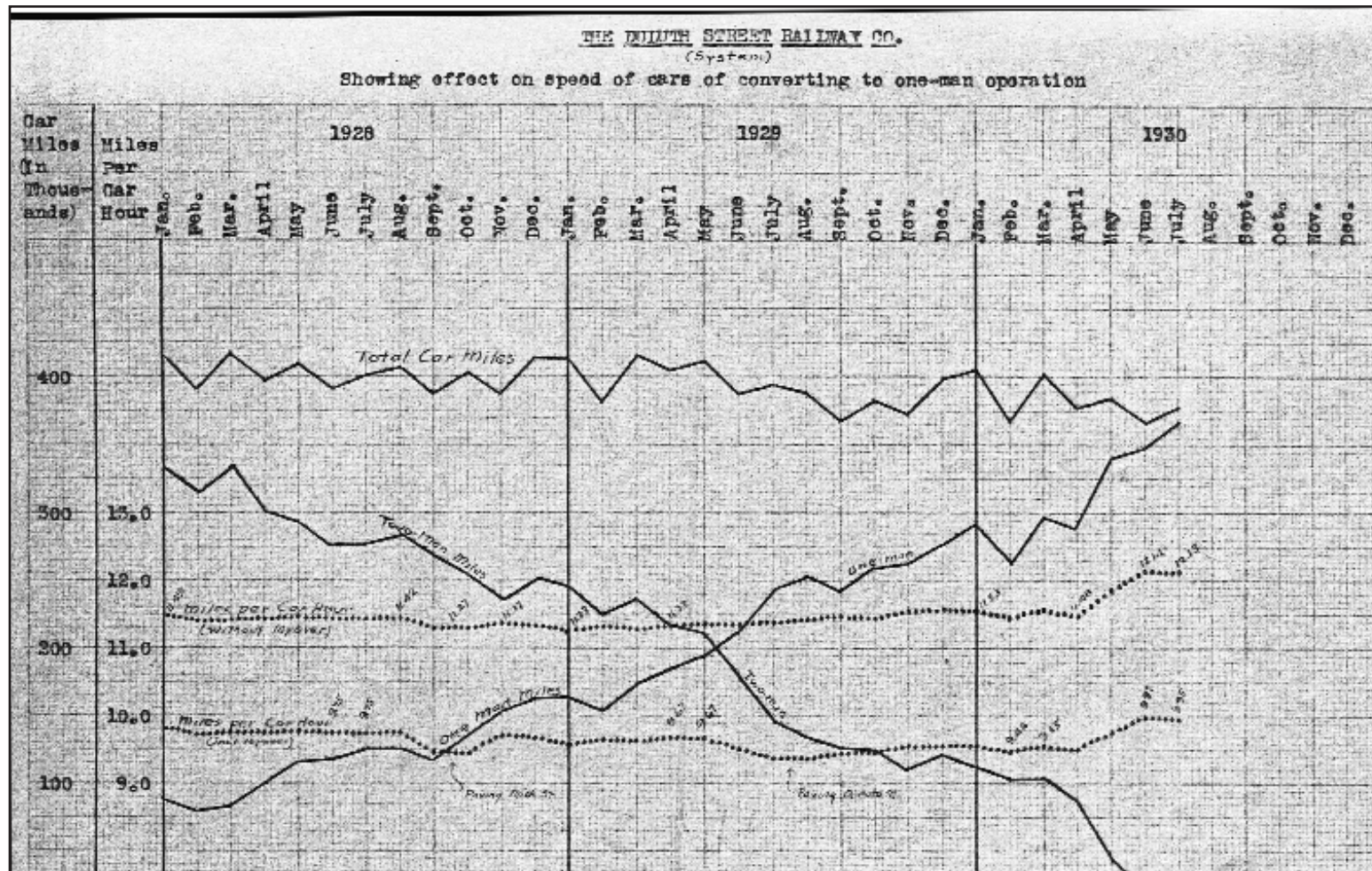
This DSR chart tracks the conversion to one-man against system speed.

Running time and layover chores

If there was one overriding concern about eliminating conductors, it was that passenger boarding might be slowed, requiring more running time and in turn more streetcars. The first concern voiced, in a September 1928 memo, was the need for more layover time at the end of the line. "When a one-man operator gets to the end of his route he has to do all of the conductor's clerical work which the conductor on a two-man car usually does while his car is running or nearing the terminal. Some of these duties are: Enter passenger figures, check up his transfers and put them in an envelope, change the side signs in the car, look through the car carefully

for lost articles, punch transfers ahead, etc. A motorman operating a streetcar nowadays needs 3 or 4 minutes relaxation after a 30 or 45 minute run through the present street traffic. If his running time is too tight so he cannot even get his scheduled 5 or 6 minute layover time and then has to work in a frenzy to get his day car work, transfers, sign changes, ventilation and other duties taken care of, he will soon think that one-man operation is very burdensome."

As the rebuilt cars entered service, the company tried to quantify the delays. In November a checker compared comparable trips with one-man and two-man cars on the Lester Park and Woodland lines and came up



Form 31
4-17

DULUTH STREET RAILWAY CO. Duluth Division

TO CONDUCTOR:

Carry and deliver: } Envelope
 } Packages of News Tribunes

From _____ To _____

_____ 192__ Signed _____

Conductor will see that this form is properly filled out and signed before accepting papers or envelope. Turn in with transfers collected on same trip.

Papers Received at _____ M. _____ Conductor.

4-17

DULUTH STREET RAILWAY CO. DULUTH DIVISION

To Conductor:

Carry _____ packages of Herald from _____

5th Ave. West to _____

_____ 192__ Signed _____

Conductor will see that this form is properly filled out and signed before accepting papers, and will enter time at receiving P.O. below, when it and card is to be filed in transfer collection below card.

Papers received at _____ M. _____ Conductor.

These forms documented the hauling of newspapers on the streetcars.

with these ominous findings: that passenger boardings and alightings on one-man cars took 60 percent longer per person than on two-man cars, and that one-man cars spent twice as much time standing still to load and unload.

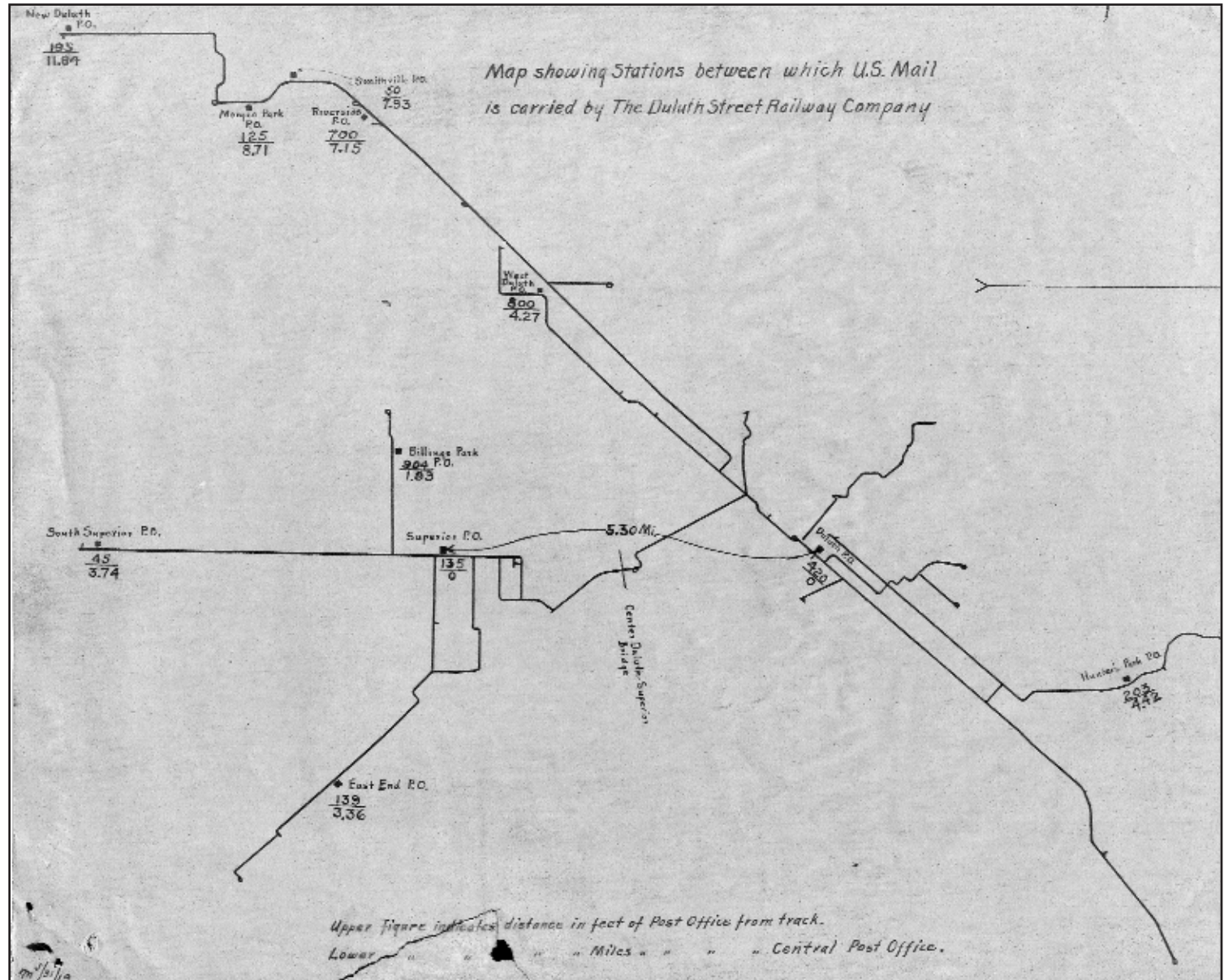
A December 1928 newspaper story reports on complaints of one-man cars being slower. In response, DSR scheduled them to alternate with two-man cars on the Lester Park and Woodland lines. An on-time check of that arrangement showed no measurable difference in on-time performance. The graph on page 11 which shows the increase in one-car miles and the decrease in two-car miles also shows that system speeds increased somewhat following the transition. Another factor probably caused this to happen. The time period 1928-1930 corresponded to the onset of the Great Depression. Ridership dropped, which would have increased system speed.

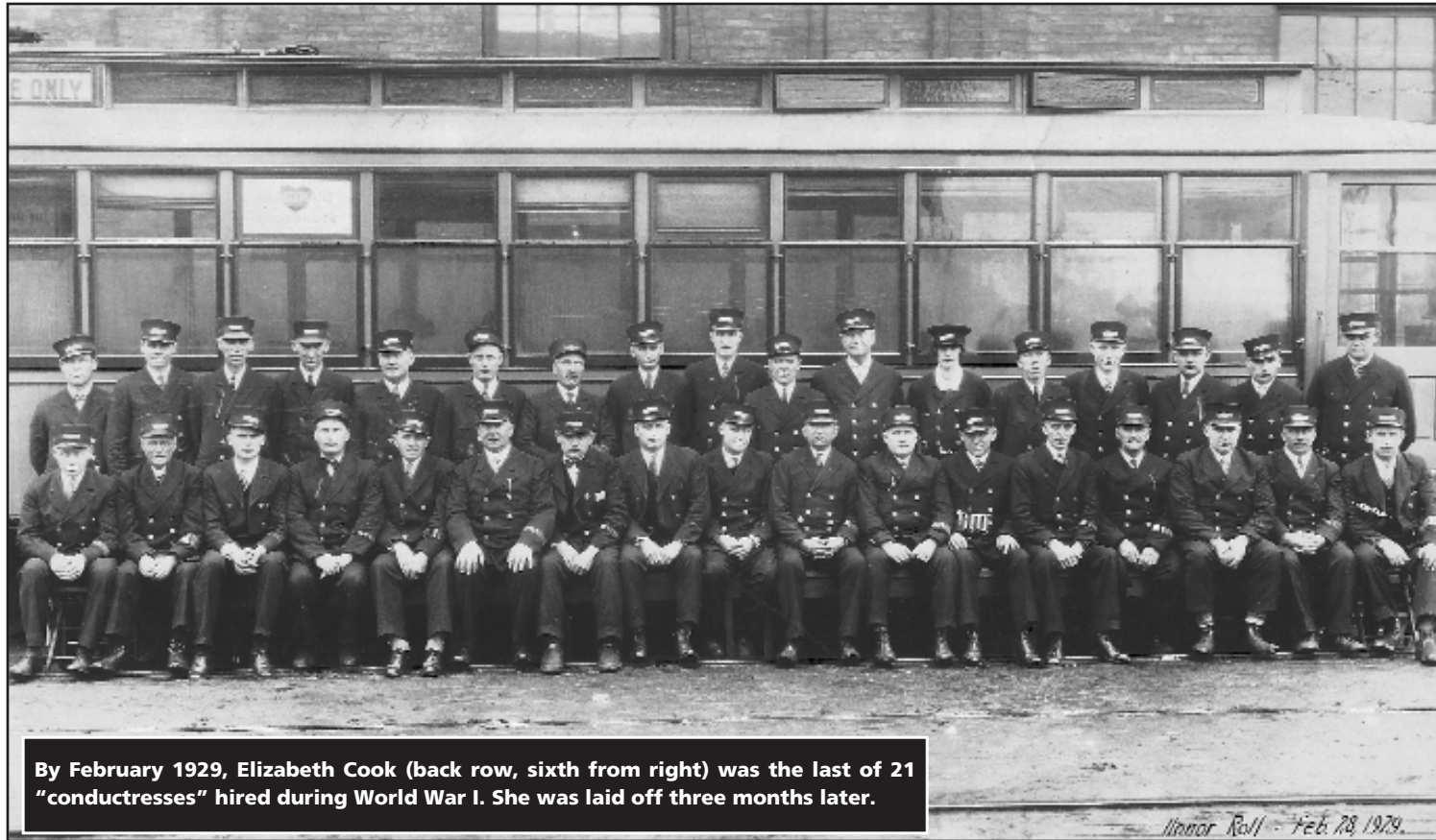
Mail, newspapers—and dogs

In the days before trucks were invented, the streetcars did a considerable side business carrying mail and newspapers. With the elimination of conductors, responsibility for loading and unloading fell on the motormen, and

DSR wondered if it should exit this business. A November 19, 1928 investigated the subject. It cites a federal law passed during World War I that forbade streetcar company from refusing to carry the mail. The memo stated that "this seems like an unreasonable and an almost tyrannical requirement" but agreed that it was

still the law of the land and company practices should be adjusted to make it as workable as possible. An example occurred during the 1928 Christmas mail rush, when an additional employee was assigned to a single afternoon trip just to handle the mail bags. To give an idea of the volume, we have a July 1929 run card that records





16 mail bags carried on a single trip to Gary-New Duluth.

From an employee bulletin: "Beginning September 22, 1929, no side service will be performed in delivering or receiving mail at the Morgan Park and New Duluth post offices. In case no one from these post offices meets a car from which mail is to be delivered, the car operator will sound his whistle and wait not to exceed two minutes after time he is due at the post office, and then proceed leaving the mail on the street car. If mail is not delivered on the west bound trip and no one meets car on return trip mail will be delivered to our car starter at 3rd Avenue West and starter will notify post office. This arrangement relieves car operators from leaving their cars in connection with the delivery of mail." Despite these concerns, mail continued to be

carried on streetcars and buses until October 21, 1935.

Twice daily, newspaper bundles were placed on the cars in large numbers. This happened despite language in the city franchise that outlawed the carrying of any packages or freight on the cars. This was not much of a problem in the early morning hours, but the afternoon papers tended to crowd the passengers. DSR went to the papers and told them that no bundles would be carried on one-man cars. It would take two years to phase out the two-man cars, but after that period the newspaper publishers would have to buy trucks to deliver the papers, an added expense they did not welcome. In fact, the memo stressed handling the situation diplomatically, so as not to suffer the papers' editorial wrath.

Despite these efforts, almost a year later DSR management and the newspapers discovered that neither was fully aware of whether newspapers were still on the cars. The News Tribune wrote an editorial criticizing DSR for its upcoming discontinuance of newspaper hauling, only to discover that the paper had previously switched everything to trucks. The DSR General Manager also was unaware of the switch, thinking they were still being carried on two-man cars.

In the process of discontinuing paper hauling DSR discovered that one of its shop employees was being paid on the side by the News Tribune to coordinate the placement of papers on the cars.

For some years DSR issued permits for passengers to bring dogs on the streetcars. This was done as a benefit to

hunters who would take the cars to the edge of town. Permit usage peaked at 274 in 1917 and by 1928 had declined to 129 because "...almost everyone who has a dog also has an automobile". So the decision was made to eliminate dog-hauling from all streetcars.

Conductresses

The terms "one-man" and "two-man" were not exactly accurate during the 1920s. The Spring 2008 issue of TCL ran newly discovered photos of the 21 women hired as conductors during World War I. We now know more about them. The company dubbed them train women (the men were trainmen) or conductresses. The first was hired on May 10, 1918. Having women as crew members was controversial enough that they were not assigned to crews randomly. DSR consulted with the women and paired them with hand-picked motormen. They were generally barred from the Interstate line, with its more complex operating procedures.

A company bulletin goes into quite a bit of detail about the required uniform. "The regulation uniform of conductresses will consist of a uniform cap exactly the same as that prescribed for conductors; a uniform coat similar to that prescribed for conductors except it may be cut to fit the figure; a plain skirt made of the same material as that prescribed for the coat, the skirt to be made without unnecessary fullness, but with plaits on the side to give freedom of movement, and to be of a length to reach the shoe tops; black hose and plain leather shoes either black or tan with tops not less than 9" from the ground and with broad heels not more than one inch in height."

The women continued on after the war. Five were still employed in 1924. An August 1928 Duluth News Tribune article featured the remaining two, Christine Pearson and Elizabeth Cook.

"Veterans of the service, these girl conductors today are wearing the gold 'hash marks' of service on the cuffs of their uniform coats. They have stayed with the service and accepted its hardships ten years, and both express their intentions of remaining. The job, they said, offers better opportunities than most situations open to women, both from a standpoint of salaries and promotions; and then they said, they find the work most interesting.

We see people in all moods each day, said Miss Cook. We find them in their 'morning grouch', their 'evening smile' and just in the rough; humanity as it really is and not submerged in the subterfuge of business or society. Yes, we have our troubles, too, occasionally. There are fresh boys and intoxicated lads, and then there are those who are a bit rough, but we handle them all and, honestly, I like the contact with people. They treat us wonderfully at the office and, while we do not claim any advantages because of our sex, the shop men are most pleasant to us. I expect to remain in the service.

Miss Pearson said, I like the excitement of meeting folks and I like the work. It is different from the usual run of employment and I have no intention of quitting my conductor's job for something less interesting.

Under the state employment laws, which require women to work only 54 hours per week, these two cannot hold the regular all-day run to which they are both entitled under their seniority rights. They are working morning and evening runs and they work every day of the week."

Despite their desire to continue working, both women were gone by May 1929. During 1928 and 1929, DSR converted 54 streetcars to one-man operation. The roster of conductors was reduced and eleven years' seniority likely wasn't enough to avoid a layoff.

World War I reverse commute

The Duluth Street Railway saw its highest ever ridership in 1918 and 1919. A major contributor was the surge in manufacturing for the war effort. Nowhere was this more evident than the heavy ridership bound for the Morgan Park steel plant and the McDougall Shipyard near Grand Avenue and 88th Avenue W. The shipyard had opened in 1917. The steel plant opened in 1915, but was reached by streetcar service in 1916.

Ridership became so heavy that in late 1918 DSR purchased a new rotary converter to increase the power at its 92nd Avenue W. substation. That year the Northern Pacific added special trains between downtown and Morgan Park. Among the DSR records preserved by Jim Kreuzberger is a series of load checks taken at Grand Avenue and 57th Avenue W. during the morning rush hour (6:00-8:15 AM). It shows 2509 passengers on 37 streetcars in 135 minutes. That's a car every 3.6 minutes. The average load was 66 passengers in each car, versus 50 seats.

An examination of the check shows that the first nine cars were headed for either Morgan Park or New Duluth. This would appear to be feeding the 7 AM day shift at the steel plant. The rest of the morning there are Morgan Park or New Duluth cars about every ten minutes, with more cars terminating at 92nd Avenue W. loop, a few blocks beyond the shipyard. The loop was constructed in 1917 specifically for the shipyard trippers. Most of these cars have a "T" before the run number, meaning they are extra cars. Note that four of the trippers, including one that was cut that day, originated at 57th Avenue W. This was the center of the West Duluth neighborhood, and proof that quite a few employees lived in West Duluth. An additional ten trips

started at 26th Avenue W.

According to company memos, the extra service to the shipyard started in November 1917 and peaked around June 1919, when about 4600 people were employed and 18 or 19 extra cars were needed each rush hour.

At shift change, the crowds waiting

to board at the Morgan Park loop sometimes became unruly and hard to manage. From a company memo to line foremen: "Conductors are complaining that about 5:57 P.M. the workmen at the Morgan Park loop rush the cars and board through the front way when they stop to turn the

---Early Morning Service---

Run No.	Time due at 57th Ave. W.	Car No.	Actual time passing 57th W.	Passengers carried	Starting point	destination
160	6:08	207	6:08	25	3rd E.	Morgan Park
107	6:14	198	6:14	25	3rd E.	New Duluth
161	6:16	213	6:16	20	26th W.	Morgan Park
164	6:27	214	6:25	20	3rd E.	Morgan Park
106	6:34	211	6:34	25	E 4th.	New Duluth
163	6:39	209	6:39	25	3rd E.	Morgan Park
T3	6:43	152	6:43	50	26th W.	Morgan Park
154	6:47	223	6:47	65	3rd E.	Morgan Park
111	6:54	201	6:54	20	E 4th.	New Duluth
162	6:59	291	7:03	25	3rd E.	92nd Ave. W.
T11	7:03	158	7:10	65	26th W.	92nd Ave. W.
155	7:05	213	7:05	85	3rd E.	Morgan Park
156	7:09	215	7:06	60	3rd E.	92nd Ave. W.
T13	7:11	157	7:09	65	26th W.	92nd Ave. W.
T1	7:13	161	7:15	25	3rd E.	92nd Ave. W.
102	7:14	258	7:16	90	E 4th.	New Duluth
T15	7:18	281	7:12	80	26th W.	92nd Ave. W.
150	7:19	153	7:19	80	3rd E.	92nd Ave. W.
T5	7:21	154	7:20	75	3rd E.	92nd Ave. W.
T17	7:22	157	7:23	25	26th W.	92nd Ave. W.
T19	7:24	220	7:24	20	26th W.	92nd Ave. W.
159	7:25	189	7:25	75	3rd E.	Morgan Park
T21	7:26	132	7:26	75	26th W.	Morgan Park
T7	7:27	162	7:27	20	3rd E.	92nd Ave. W.
T23	7:28	201	7:28	55	26th W.	92nd Ave. W.
152	7:29	290	7:29	25	E 4th.	92nd Ave. W.
T9	7:31	151	7:30	80	3rd E.	92nd Ave. W.
T3	7:32	162	7:32	25	57th W.	92nd Ave. W.
162	7:33	291	7:37	20	57th W.	92nd Ave. W.
T25	7:33	271	7:33	60	26th W.	92nd Ave. W.
105	7:34	267	7:34	25	E 4th.	New Duluth
151	7:35	215	7:36	25	E 9th.	New Duluth
T11	7:37	cut			57th W.	92nd Ave. W.
165	7:39	283	7:38	80	3rd E.	92nd Ave. W.
T18	7:45	152	7:46	9	57th W.	Morgan Park
101	7:54	230	7:54	80	E 4th.	New Duluth
157	8:09	231	8:09	50	E 4th.	Morgan Park
128	8:14	202	8:14	55	E 4th.	New Duluth

Total 2509. Average 66
John McElroy



Left: The McDougall Shipyard station on Grand Avenue at Spring Street.

Below left: Approaching the Morgan Park steel plant and loop.

Below right: The Morgan Park loop. The two tracks turning right are headed for Gary-New Duluth. The middle and far left tracks are the loop itself, with a storage spur inside the loop.

Opposite page: A morning rush hour load check from 1919 shows the extraordinary reverse commute ridership to the shipyard and steel plant.

switch before the car is around the loop."

Another bulletin instructed the motormen pull all the way around the loop so it could accommodate three cars without blocking the Gary-New Duluth through cars. To speed boarding and alighting, passengers were allowed to leave and enter through the motorman's compartment, which was normally off limits to passengers.



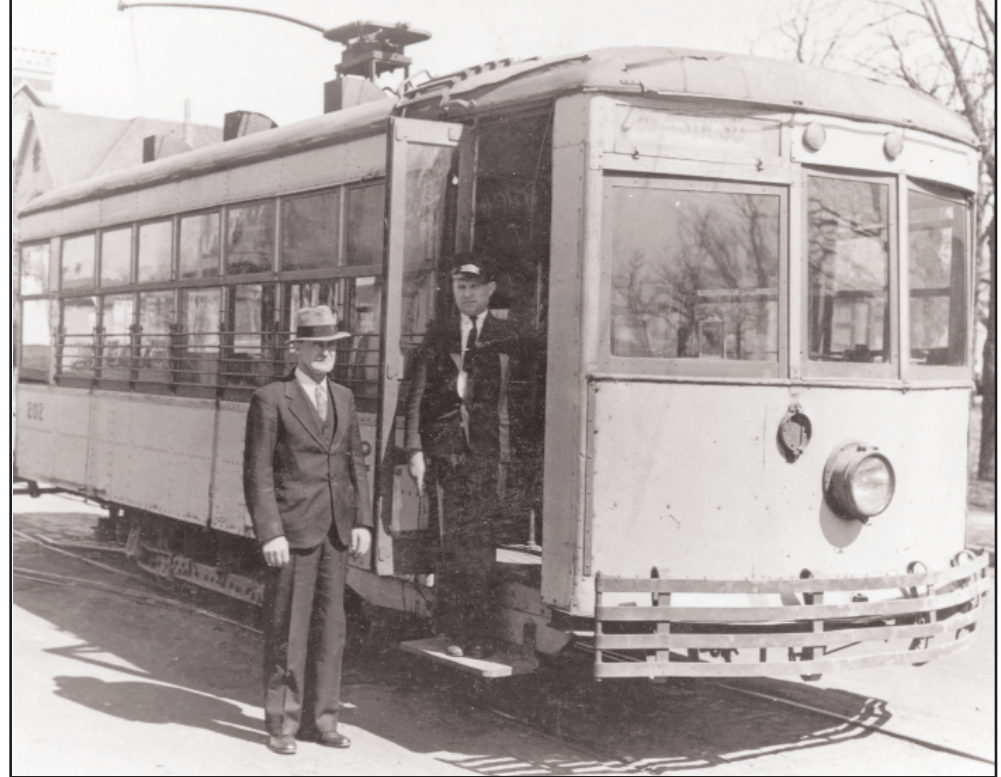
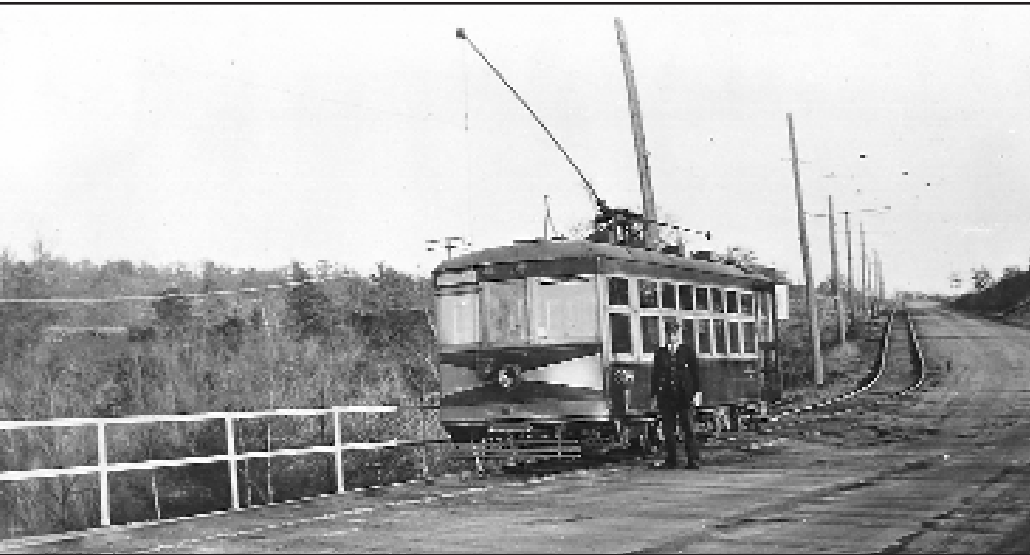
Birney Safety Cars in the Northland

-Aaron Isaacs

With the exception of the PCC car, no single streetcar design came closer to being universal than the Birney Safety Car. Charles O. Birney's design for an extremely lightweight, single truck streetcar arrived at a time when streetcar manufacturers were

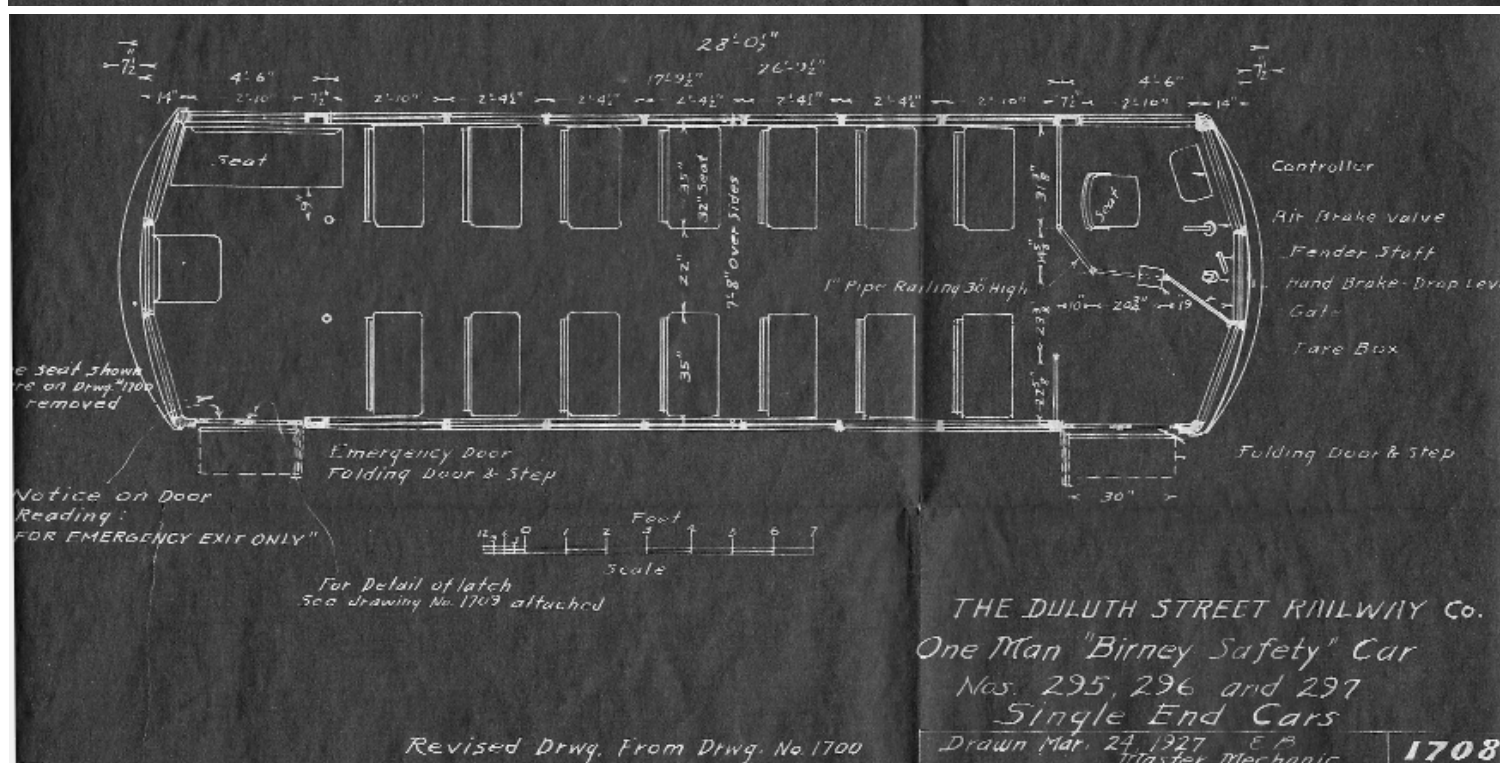
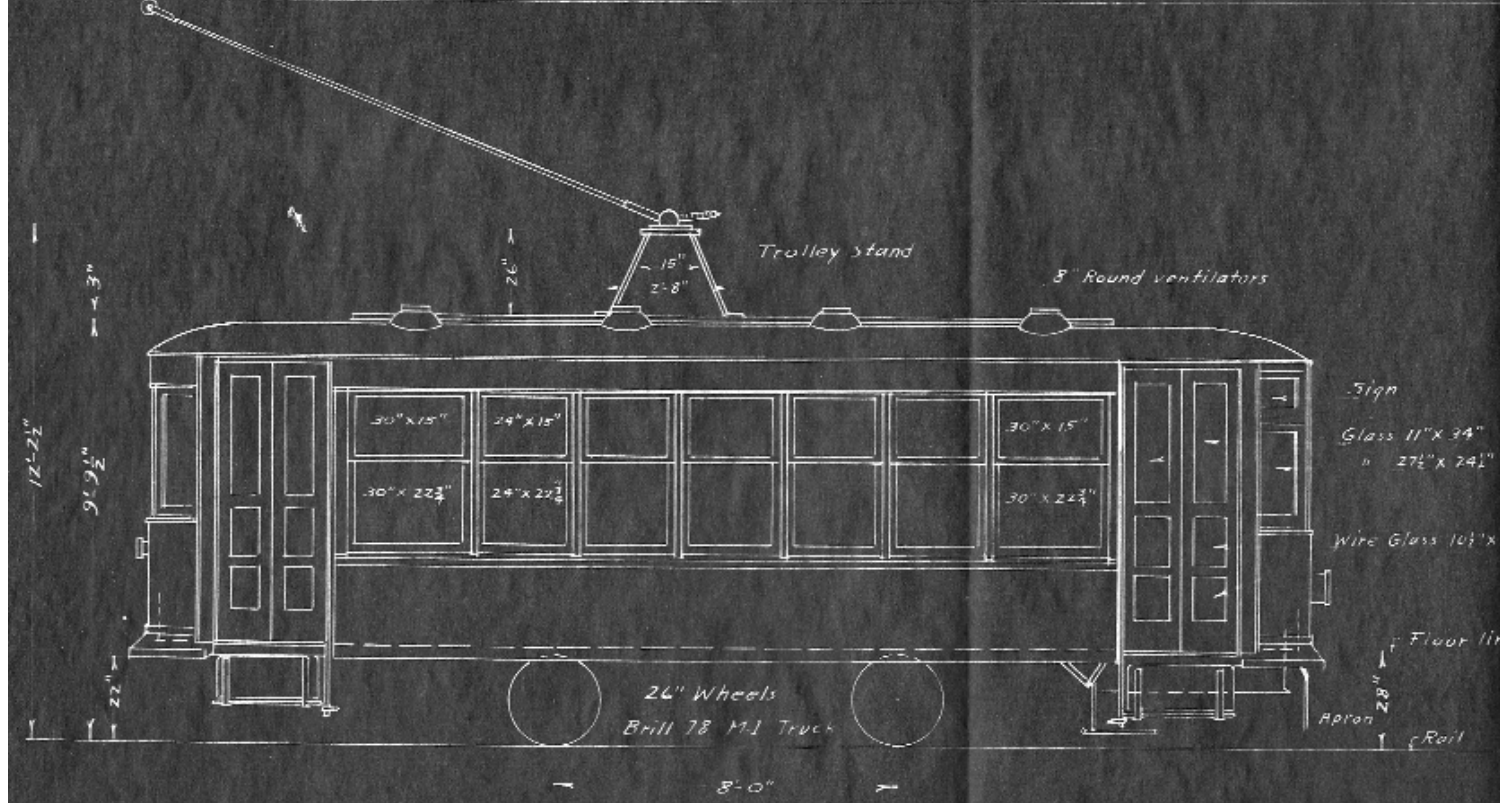
transitioning from wood to steel construction. Reducing weight reduced operating costs, which made smaller motors possible. That made smaller diameter wheels acceptable which lowered floor heights, making it easier for passengers to board and alight.

In his classic book "Time of the Trolley", William D. Middleton says it best. "Birney's concept called for a small, extremely lightweight car that could be worked at low cost with a



Northland Birneys ran in Eau Claire (left), Fargo-Moorhead (below left), St. Cloud (above) and Grand Forks-East Grand Forks (below).





one-man crew. Because of the low operating cost, more frequent service could be given, with a resultant increase in traffic." Indeed that very thing happened in Fargo-Moorhead, where new Birneys replaced the entire old fleet of two-man cars. All the conductors were retrained as motormen and service frequency doubled.

Middleton continues, "The "Safety Car", as it was called, was a single truck car averaging about 28 feet in length and seating approximately 32 passengers. The standard production models weighed anywhere from 7 to 9 tons (our streetcar #1300 weighs about 23 tons). Safety cars weighed only about half as much per seat as most of the heavier equipment they replaced. One of the car's novel features was its "dead man control", which automatically brought the car to a halt if the operator released the controller or a special foot pedal without first setting the brakes.

The first Birney cars were placed in service in 1916, and by 1920 over 4000 of them had been built. Ultimately more than 6000 were in service throughout the United States as well as a number in foreign countries. After reaching a peak of 1699 cars built during 1920, Birney production declined rapidly, and the last one was constructed in 1930."

In Minnesota, North Dakota and Western Wisconsin, 56 Birneys were purchased as follows:

Duluth-Superior, 6 cars in 1919.

Grand Forks-East Grand Forks, 6 cars in 1920, plus 3 cars acquired second hand in 1930

Fargo-Moorhead, 15 cars in 1920, plus one additional in 1923

St. Cloud, 2 cars in 1919

Winona, 2 cars, acquired second-hand in 1928.

La Crosse, 8 cars in 1920, 3 in 1922, 2 in 1926.

Eau Claire, 8 cars in 1921-22

How to run a Birney car

This operating bulletin from 1919 instructed Duluth motormen how to run the newly delivered Birney cars.

Effective Oct. 1st Birney Safety cars will be put in operation on the Park Point line. These cars will be operated by one man and are of the pay-as-you-enter type. Motormen operating these cars will note the peculiarities described below.

As the controlling apparatus on the Birney car is interlocked so as to make it impossible for the cars to move without the motorman being in control, it has resulted in the air valve being designed and operated differently from the valves on any of our other cars. The first half of the air valve from the extreme left to the center covers the application admitted to the brake cylinder but when the brakes are entirely released the valve is set to a point farther to the left than the valve on any of our other cars and when the brakes are applied in emergencies the valve is not past the center position. Moving the valve handle to the extreme right notch opens the doors and returning it to the center notch shuts the doors. It will be seen that it is impossible to move the valve to the extreme right to open the doors without at the same time applying the air in emergency. After making an application of air the controller handle should be pushed down before the air is released otherwise the automatic action will energize a plunger which trips a circuit breaker and applies the air to the brakes. The foot valve directly between the controller and the air valve may be depressed instead of depressing the controller handle to prevent the circuit breaker from being released when the brake valve is moved to the off position.

It will require a good deal of practice for motormen to become familiar with

the operation of these cars. They will learn that it will be much easier to lock the wheels than on the larger cars on account of less weight and are cautioned to use extra care to prevent the wheels from becoming flat. These cars are equipped with four sand boxes through which sand is fed by air pressure. When sand is needed it is only necessary to press down on the brake valve handle which depresses a valve connected with the half metal circle under the brake valve lever. The lever can be depressed and sand applied regardless of the position the valve may be in.

The cars are double-end and it will be necessary for the motorman on arriving at terminals to open the door and permit all the passengers to alight and when such passengers are alighting he will release the trolley pole and place it on the wire. He will then close the door and transfer the operating handles, foot pedals and cash fare register to the other end of the car. He will then open the door to permit passengers to board and afterwards pull down the trolley on that end of the car. Care should be taken in removing the controller lever so as not to break the window.

Motormen must be careful not to run over even slight obstructions on the tracks which will likely cause derailment. These cars are also equipped with electric heaters which will be turned off and on so as to keep the cars comfortable at all times.

When running at night the curtains back of the motorman must be pulled down and a headlight displayed on the front of the car. Smoking will be permitted in the extreme rear of the car corresponding to rear vestibules unless objected to by passengers.

When making an emergency stop with these cars it is only necessary for the motorman to raise his hand from the controller lever no matter what

position it may be in, and if the motorman's foot is not in contact with the foot valve, air will be admitted to the controller causing the over-head switch to be thrown off and air applied to the brake cylinder.

After making an emergency stop by moving the hand from the controller handle and allowing the car to stop by automatic action, the controller handle or the foot valve must be depressed before the over-head switch can be reset. Care should be taken to see that the controller is turned to the off position before resetting the switch. After the over-head switch is reset the controller must not be moved for several seconds until the air has automatically released from the brake cylinder.

In making regular stops motormen must be careful not to move the brake valve handle beyond the center notch before the car has been stopped for the reason that air will then be admitted to the door cylinder causing the doors to open and if the car is at the time passing a vehicle or approaching passengers the doors will come in contact with persons or objects on the streets and serious accidents result.

Duluth-Superior potpourri

As John Diers and I have researched our upcoming Duluth-Superior book *Twin Ports by Trolley*, we have discovered many interesting historical details that are too trivial or detailed for the book, but are a good fit for this magazine. Many come from the late Jim Kreuzberger's unfinished manuscript on Duluth-Superior and from the documents he accumulated. Here are a few. -Editor

No prisoners

Superior Evening Telegraph
March 14, 1911

"Sentiment among patrons of the East End street car lines is crystallizing against the use of the street cars to

transport prisoners from police headquarters to the county jail at the court house and it is declared that unless the sheriff voluntarily discontinues that method of transportation legal procedures will be resorted to to compel some other system.

'It is too disgusting for words,' said one prominent resident of the East End who is at the head of the present agitation. 'The authorities apparently insist on taking their prisoners to the East End at noon time when many of the Normal school girls who live in our end of the city are going home to lunch. I have been on the car a number of times when a deputy sheriff appeared with a half naked, debauched and profane woman of the underworld or with some filthy besotted man whose presence not only tend to physically but morally contaminate everybody on the car.'

The quiet world of Park Point

From a company memo,
August 29, 1929

"I just learned yesterday that the hand brakes on Park Point cars cannot be used. It is claimed that these hand brakes have been fastened by wire for five or six years past and have never been used during that times. The reason for wiring the hand brakes, which no doubt was done by the car house men on Park Point, was that our car operators could not keep boys and even other passengers from setting the hand brakes on the opposite end of the car when the car was running. The hand brakes are of the wheel type and it seems impossible to keep mischievous boys from tampering. ...It has been suggested that a ratchet hand brake similar to those on our remodeled cars be put on the Park Point cars...I do not like the idea however of not having hand brakes on these cars."

Signal for connecting cars

Employee bulletin, March 12, 1929

"Our car starter's stand at Belknap Street and Tower Avenue has been equipped with a red signal light to be used to hold cars to wait for passengers from connecting cars. If it is displayed in the window in the north side of the starter's stand, south bound car will wait for passengers from connecting car. If it is displayed in the window in the south side of the starter's stand, north bound car will wait for passengers from connecting car. If it is displayed in the window in the east side of the starter's stand, west bound car will wait for passengers from connecting car.

All Duluth crews running Interstate cars in Superior will observe these light signals closely. We have had complaint about transfer connections being missed by Duluth crews and therefore I want a carman to never pull away from this transfer point without a permissive signal from the starter's box."

Woops. Ouch!

Duluth Herald, June 12, 1897

"Careless wheelmen (bicycle riders) probably receive more falls on Superior Street between 5th and 6th Ave. West than at any other point in the city. The street railway tracks are there connected by a cross switch, which bicycle riders attempt to cross at full speed without changing course to strike the rails squarely. The result is that the wheels are knocked from under them and they are thrown to the pavement. Several times during the past few days riders who have fallen here have narrowly escaped being run over by street cars."

Dude, what's that pole for?

Duluth Herald, March 26, 1902

"A number of West Duluth passengers on one of the street cars were given a very annoying wait at the

ore docks a few evenings ago through the ignorance of a green crew. The car was running over the viaduct toward the city, when the lights went out. The motorman and conductor are said to have discussed the trouble for some time, but finally unable to solve the mystery, one of them walked to the 26th Ave. West car barn and had the supply car run out to the viaduct. The man in charge of the wrecker took one look at the car and told the conductor if he would put his trolley on the wire, the car would probably run along all right."

Swell deal

Duluth Herald, May 25, 1903

"Superior is getting a little valuable experience with cedar block paving on Tower Avenue north of 8th St. The blocks that were recently put down were from cedar cut in the winter when the sap was down and classed as dry cedar. When the rain began to fall the blocks began to swell and havoc resulted. The street railway company was the worst victim. The blocks swelled with such force that they forced the large steel rails apart several inches. The spread was so great that the cars lost the rails, dropping off between them, and the company had to make repairs immediately. The pressure is being eased by taking out blocks."

"I'll sue!"

Superior Evening Telegraph, August 22, 1917

"Coming out of her house on last March 3rd, Mrs. Anna Shimerock fell over the carcass of a horse that had been dragged in front of her doorstep by employees of the street car company and broke her nose, according to a complaint filed in the circuit court. Mrs. Shimerock has filed suit for \$5000 for the injuries she received and her husband is asking \$1000 for the loss of his wife's services while she was

recovering. She claims that one of the company's cars ran into the horse and killed it. The car men dragged the dead animal in front of her house to get it out of the way of the cars, she avers. Due to the high snow she did not see the obstruction when she came out of the house and fell over it."

Casual summer

Employee bulletin, May 29, 1929

During the hot weather months of June, July, August and September, Carmen will be permitted to remove their uniform coats and vests when wearing a clean shirt of the solid color known as Chambray Blue which will be considered uniform. Clean plain collars of the same color (attached or detached) must be worn with such shirts and a plain necktie of dark color. Suspenders must not be worn outside the shirt when uniform coats are removed. When uniform coats and vests are removed they must be nearly wrapped and carried in the straps provided for overcoats on two-man cars and in the coat box on one-man cars. Coats and vests must never be hung up in any part of the car."

Watch your step

Employee bulletin, June 21, 1929

"Complaint has been made that some of our car operators on the Crosley Avenue Line have stopped their cars so that passengers have to get off in a mud hole. Motormen will see that passengers are allowed to board or leave cars where the street is dry by stopping a few feet back of the regular stop or going a few feet forward."

Trick or treat

Employee bulletin, October 30, 1922

"In past years boys have been in the habit of placing snow fences on the tracks in dark places, greasing the rails on grades and throwing ropes over the trolley wires. Motormen are cautioned

to run slowly in dark places and have their cars under such control that they can stop within a distance that they can see clearly. Motormen are cautioned not to skid the wheels in case the tracks are greased. See that you have plenty of sand in the sand boxes before darkness comes on.

In case you actually see any boys placing obstructions on the tracks, try and catch them and bring them to the police station. In case you do catch one, be sure and get witnesses so that the company may have a clear case against the offender.

Conductors should watch their trolley ropes at all places where boys are seen congregating."

"Ding, ding. Bye."

Newspaper story, Nov. 3, 1907

"A street car conductor on the East 4th Street line was given some strenuous exercise Halloween night by some of the mischievous boys near the easterly end of that line. The car had been standing at the end of the track until time for it to leave on its regular trip. The 'con' had stepped off for a minute and was standing on the sidewalk. One bright young American saw the opportunity and took advantage of it. He jumped on the car and gave the signal to the motorman to go ahead. The motorman could not see who had rung the bell and supposed that all was well. The boy jumped off and the car started. Thinking that the motorman had started his car to run only a few feet the 'con' lost his chance to get aboard and finally woke up to the realization that his post of duty was fast disappearing down the street. He started on a dead run to catch up and, if the car had not stopped to pick up some passengers, the sprinter might be running yet."

Inside the State Fair

A recent photo swap with the State Fair Museum brought these photos into the MSM photo collection. All show the streetcar terminal from inside the fair.



This is the original State Fair streetcar station, viewed from several angles. Below right: prize cattle west of the terminal.





After leaving the streetcars, fairgoers entered a grassy square that changed considerably over the years.



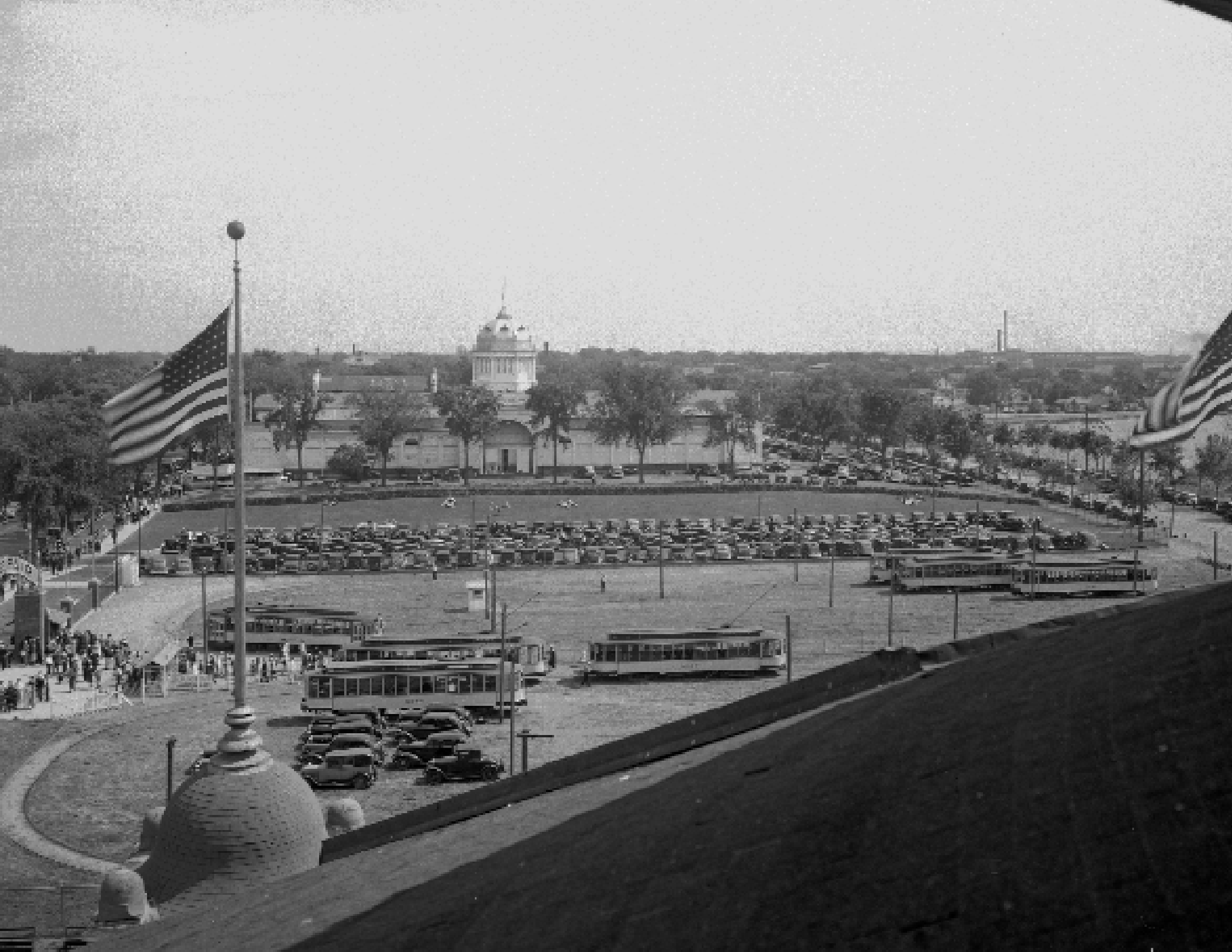


This view of the grandstand was taken from the streetcar station roof. It shows how the long entrance ramp displaced much of the grassy plaza. Above right: In later years the streetcar entrance was replaced by this simple structure with its arched State Fair sign. Below: This is the departure shed on the west edge of the streetcar terminal.





S.F. 36-427





MINNESOTA STREETCAR MUSEUM

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August 2021

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